

## REMARKS

In an Office Action mailed on September 29, 2005, claims 1, 3-7, 9, 11-14, 16-23, 25, 27-29, 31-33, 35-37, 39, 41 and 42 were rejected under 35 U.S.C. § 102(e) as being anticipated by Sorrells; and claims 8, 15, 24, 30, 34, 38 and 40 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sorrells in view of Abeno. The §§ 102 and 103 rejections are discussed below.

### §§ 102 and 103 Rejections of Claims 1 and 3-5:

As amended, the method of independent claim 1 includes providing a signal that has a fundamental frequency and providing a complex input signal and the first signal to Gilbert cell multipliers to modulate the input signal with the first signal. Additionally, the method of independent claim 1 includes tuning the modulation to a harmonic of the fundamental frequency. Thus, independent claim 1 has been amended to more positively recite aspects relating to the modulation of the first signal.

Contrary to the limitations of independent claim 1, Sorrells fails to teach or suggest the modulation of a complex signal with Gilbert cell multipliers.

Additionally, the hypothetical combination of Sorrells and Abeno fails to teach or suggest the limitations of amended independent claim 1. More particularly, although Abeno discusses a single Gilbert cell multiplier for purposes of phase modulation, Abeno fails to teach or suggest multiple Gilbert cell multipliers to modulate a complex signal. In addition, Abeno fails to teach or suggest how a Gilbert cell multiplier would be incorporated into Sorrells' system for purposes of performing the complex modulation and tuning that is recited in claim 1. As such, claim 1 is patentable over the cited art, alone or in combination.

Therefore, for at least the reasons that are set forth above, withdrawal of the §§ 102 and 103 rejections of claims 1 and 3-5 is requested.

§§ 102/103 Rejections of Claims 9, 11-13 and 16:

The system of independent claim 9 has been amended to recite a modulator that includes Gilbert cell multipliers to modulate a complex input signal.

See discussion of independent claim 1 above. In particular, Sorrells fails to teach or suggest Gilbert cell multipliers for purposes of modulation. Additionally, the hypothetical combination of Sorrells and Abeno fails to teach or suggest the limitations of independent claim 9, as this combination fails to teach or suggest multiple Gilbert cell multipliers for purposes of modulating the complex signal.

Therefore, for at least this reason, withdrawal of the §§ 102 and 103 rejections of claims 9, 11-13 and 16 is requested.

§ 102 Rejections of Claims 17-22:

As amended, the transmitter of independent claim 17 includes a modulation system that includes Gilbert cell multipliers that receive a complex input signal and modulate the input signal with a first signal.

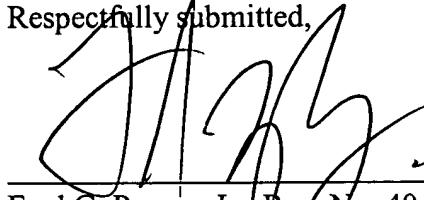
See discussion of independent claim 9 above. For at least the reason that neither Sorrells nor the hypothetical combination of Sorrells and Abeno teach or suggest all limitations of independent claim 17, allowance of this claim is requested.

Therefore, for at least these reasons that are set forth above, allowance of claims 17-22 is requested.

CONCLUSION

In view of the foregoing, withdrawal of the §§ 102 and 103 rejections and a favorable action in the form of a Notice of Allowance are requested. The Commissioner is authorized to charge any additional fees or credit any overpayment to Deposit Account No. 20-1504 (ITL.0586US).

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Respectfully submitted,  


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